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TWO NEW MITES OF THE GENUS  
*KLINCKOWSTROEMIA* FROM MEXICO  
(ACARINA: KLINCKOWSTROEMIIDAE)<sup>1</sup>

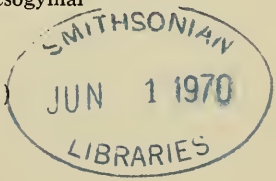
BY NEIL CHERNOFF AND ROBERT POPE  
*Department of Biology, University of Miami*

The genus *Klinckowstroemia* Tragarth contains three species collected in Costa Rica and Surinam. As with the other species in the family Klinckowstroemiidae they have all been found in association with passalid beetles. This paper describes two new species which have been collected in Mexico.

*Klinckowstroemia grabowskii* new species  
(Figs. 1 and 2)

*Female holotype*: General body shape oval. Idiosoma 1140  $\mu$  long, 900  $\mu$  wide. DORSUM. Dorsum covered by single plate which extends over gnathosoma. Numerous setae and pores on plate: pores often in pairs and triads. Pair of large barbed setae on anterior margin of plate. Dorsal shield grooved behind each seta. VENTRUM. Jugular plate has pair of large, simple setae at anterior margin and pair of pores at base. Plate 140  $\mu$  wide, 40  $\mu$  long. Sternal plate with 3 pairs of simple setae and one pair of pores. First pair of setae at anterior portion of plate lateral to pores. Second and third pairs of setae in close proximity to basal margin of plate. All measurements were made at the widest and longest portions of the plate, unless otherwise indicated. Sternal plate 95  $\mu$  long, 290  $\mu$  wide. Sternogynial plate bears single pair of pores at anterior margin, plate 70  $\mu$  long, 205  $\mu$  wide. Latigynial plates truncate and separate sternogynial and mesogynial plates for distance of 30  $\mu$ . Number of setae on latigynial plates varied both within the population and between populations. Most specimens collected at Oaxaca had 5 setae on each plate although occasional specimens had 6. Mites which were collected at Omilteme generally had 4 setae, but as at Oaxaca, the pattern of setae between latigynial plates differed greatly between individuals and in many cases on a single individual. Each plate with single pair of pores. Latigynial plates 160  $\mu$  long, 85  $\mu$  wide. Mesogynial

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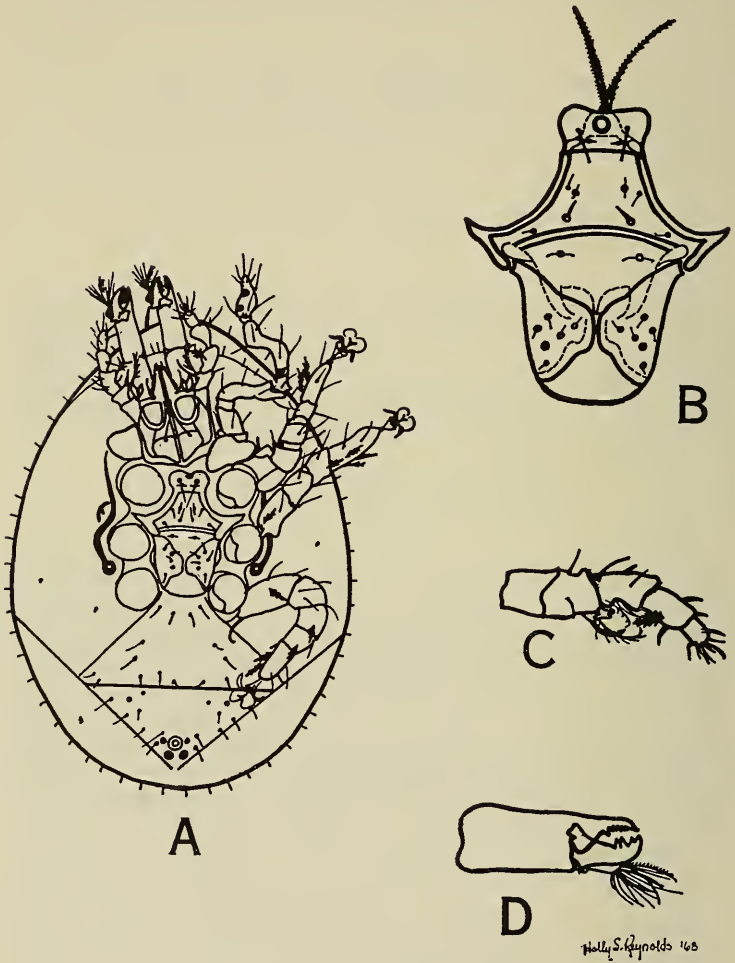


FIG. 1. *Klinckowstroemia grabowskii* n. sp. Female: A, ventrum; B, genital area; C, palp; D, chelicerae.

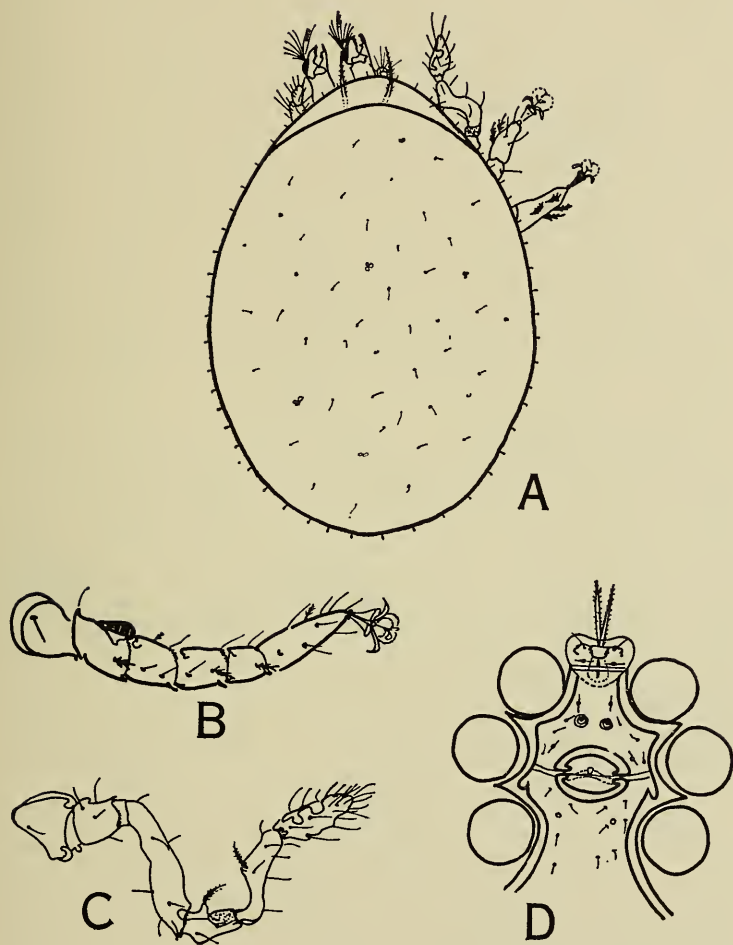


FIG. 2. *Klinckowstroemia grabowskii* n. sp. Female: A, dorsum; B, leg IV; C, leg I. Male: D, genital area.

plate broadly triangular, 70  $\mu$  long, 125  $\mu$  wide. Ventral plate with numerous setae and pores, plate 300  $\mu$  long, 580  $\mu$  wide at its widest point, 150  $\mu$  wide at level of coxae IV. Anal plate has 6 pairs of simple setae, 3 pair of pores. The two pairs of setae closest to anal opening considerably larger than others. One pair of pores beneath anal opening, other two pairs near anterior margin of plate. Anal plate 480  $\mu$  wide, 190  $\mu$  long. GNATHOSOMA. Palpi five-segmented. Some simple setae on tarsi, tibia, and genu. Tarsi have bifid apoteles. Genu has large, thick, barbed seta. The medial, distal portions of trochanters extended, bifid setae of trochanter arise immediately beneath it. Portions of distal borders of femur and genu serrated. Corniculi bifid, one branch blunt, other sharp. Chelicerae toothed and chelate. The fixed digit with 5 small teeth followed by one large one. Movable digit with 4 teeth, distal 2 minute, proximal 2 larger. Excrescence on movable digit. LEGS. Legs II, III, and IV have caruncles and claws. Distal portions of the genu and femurs of legs II, III, and IV serrated. Some barbed setae present on all segments except coxae of legs II, III, and IV. Stigmata lateral to, and between coxae III and IV. Peritreme winds around coxa III and continues anteriorly parallel to coxa, ending opposite coxa I.

*Male*: Body shape similar to female. Dorsum as in female. Jugular plate has different shape from that of female. Arrangement and numbers of pores and setae on plate similar to female. Jugular plate 42  $\mu$  long, 144  $\mu$  wide. The sternal plate has 3 pairs of setae, 2 pairs of pores, plate 180  $\mu$  long, 200  $\mu$  wide. Genital plates at level of coxae III. Each is an oval plate hinged to either sternal or ventral plate. Genital plates 80  $\mu$  long, 120  $\mu$  wide. Ventral plate with numerous simple setae and pores, plate 400  $\mu$  long, 150  $\mu$  wide at level of coxae IV, 625  $\mu$  wide at its widest part. Anal plate has 13 setae, 7 on one side, 6 on the other. From comparison with other paratypes it is apparent that the usual number is six pairs. Anal plate with 3 pairs of pores, plate 190  $\mu$  long, 500  $\mu$  wide. Gnathosoma as in female. Legs, peritreme, and stigmata generally as in female. Legs II, III, and IV have single barbed seta on all segments except coxae; other leg setae simple.

The species was described from 24 females and 16 males. The holotype data is 14.5 mi. northeast of Oaxaca, Cerro San Felipe, 9000', Oaxaca State, Mexico, 12 July 1966 (collected by Neil Chernoff). The mites were in an alcohol vial with *Undilifer incisus* Truqui the host beetle. Additional specimens of *K. grabowskii* were collected 5.5 mi. east southeast of Omilteme, 7000', Guerrero State, Mexico, 29 June 1966, from *Oileus rimator* Truqui.

***Klinckowstroemia tapachulensis* new species**  
(Figs. 3 and 4)

*Female holotype*: Body shape oval, posterior more blunt than anterior. Idiosoma 970  $\mu$  long, 740  $\mu$  wide. DORSUM. Dorsal shield entire with numerous small setae and pores. Pores often in pairs and triads. Lateral

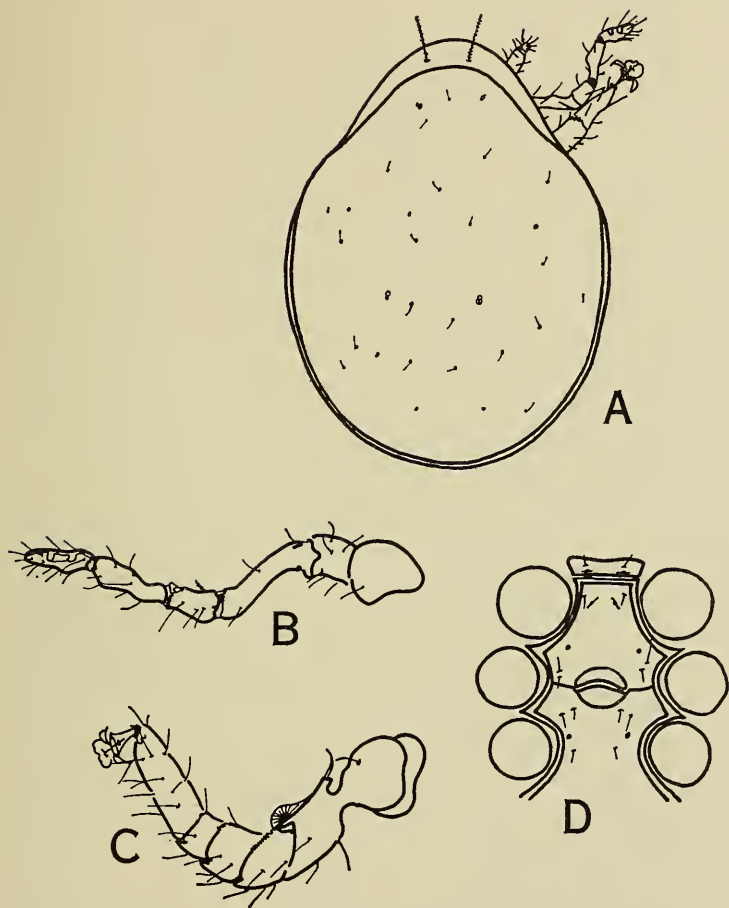


FIG. 3. *Klinckowstroemia tapachulensis* n. sp. Female: A, dorsum; B, leg I; C, leg IV. Male: D, genital area.

borders marked by presence of small simple setae. Anteriorly dorsal shield extends over gnathosoma. Two large barbed setae on anterior portion of dorsal shield. Dorsal shield grooved behind setae. VENTRUM. Jugular plate has pair of long, barbed setae ( $60 \mu +$ ). Setae positioned below anterior margin of plate, each on an ovular, delineated portion of plate. Jugular plates coalesced, and reticulations of plate indicate this line of fusion. Pair of pores at posterior margin of plate. Plate  $120 \mu$  wide,  $42 \mu$  long. Sternal plate with 3 pairs of setae, 1 pair of pores. Setae I on anterior portion of plate posterior to pores. Setae II are largest of sternal setae, lie on posterior margin of sternal plate. Setae III lateral to setae II. Sternal plate  $210 \mu$  wide,  $84 \mu$  long. Sternogynial plate with single pair of pores at anterior margin. Plate triangular,  $192 \mu$  wide,  $92 \mu$  long. Latigynial plates triangular, apposed at midline. They separate sternogynial and mesogynial plates for a distance of  $6 \mu$ . Holotype with 5 setae on right plate, 4 setae on left. Single pore on lateral borders of each plate. Latigynial plates  $132 \mu$  long,  $84 \mu$  wide. Epigynial plate triangular,  $90 \mu$  long,  $120 \mu$  wide. Ventral plate with numerous small, simple setae and pores. Pair of large pores at level of coxae IV. Ventral plate  $310 \mu$  long,  $100 \mu$  wide at level of coxae IV,  $530 \mu$  wide at widest part. Anal plate with 5 pairs of setae, 2 pairs of pores. One pair of pores lateral and posterior to anal opening, other pair in anterior lateral portion of plate. Anal plate  $150 \mu$  long,  $430 \mu$  wide. GNATHOSOMA. Palpi five-segmented. Simple setae on tarsi, tibia, genu, and femur. Tarsus has bifid apotele. Genu with large simple setae. Genu, femur, and trochanter each with one barbed setae. Trochanter has large plumose setae. Distal portion of trochanter extended and bifid. Distal borders of genu and femur serrated. Chelicerae toothed and chelate. Fixed digit with 5 small teeth followed by one large tooth, then one small one. Movable digit with 2 large teeth followed distally by 2 small ones. Dense group of simple setae attached to distal portion of movable digit. LEGS. Legs II, III, and IV have claws and caruncles. Most setae on legs are simple, but barbed setae noted on tibia and femur of leg I, and on trochanter of legs III and IV. Serrations noted on distal borders of genu and femur of all legs. Stigmata lateral to, and between coxae III and IV. Peritreme runs at slight angle to coxae and reaches lateral border of body above level of coxae I at juncture of anterior hood and lateral margin.

*Male*: Body shape similar to female. Dorsum similar to female. Jugular plate not clearly seen. Pores similar to those of female. Sternal plate has 3 pairs of setae and 2 pairs of pores. Anterior pair of setae parallel and lateral to pores. Remaining pores and setae lie on posterior lateral borders of plate. Sternal plate  $135 \mu$  long,  $156 \mu$  wide. Genital opening at level of coxae III. Plates ovular and hinged to either sternal or ventral plate. Genital plates  $60 \mu$  long,  $75 \mu$  wide. Ventral plate with numerous simple setae and pores. Pair of large oval pores medial to coxae IV. Ventral plate  $270 \mu$  long,  $450 \mu$  wide at widest part. Anal

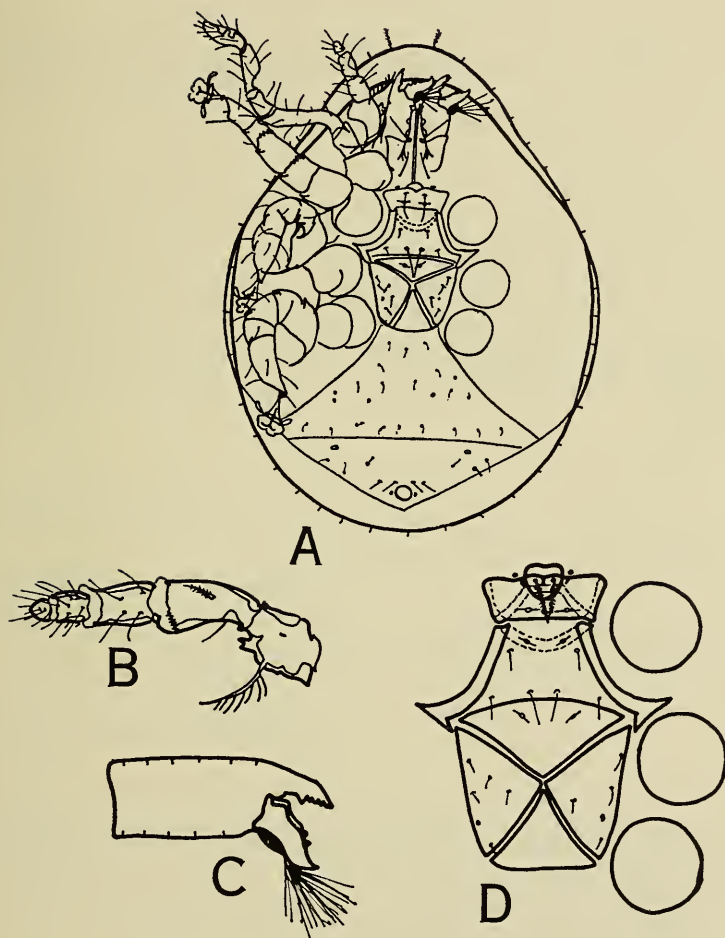


FIG. 4. *Klinckowstroemia tapachulensis* n. sp. Female: A, ventrum; B, palp; C, chelicerae; D, genital area.

plate has 11 setae (6 on one side, 5 on the other) and 3 pairs of pores. One pair of pores posterior to anal plate, other two pair at anterior border. Pair of large setae anterior to anal opening. Anal plate 145  $\mu$  long, 420  $\mu$  wide. Gnathosoma was obscured. Legs, peritreme, and stigmata as in female.

The species was described on the basis of one female and one male. The collection data for both specimens is 8.5 mi. north of Tapachula, 1750', Chiapas State, Mexico, 22 July 1966 (collected by Donna Thompson). The specimens were taken from an alcohol vial which contained both *Passalus interruptus* Linnaeus and *Popilius eclipticus* Truqui.

The genus *Klinckowstroemia* contains three previously named species. *K. tragardhi* Baker and Wharton has never been properly described. The mite to which this species refers was mentioned by Tragardh (1938) but he did not designate a genotype at that time. Baker and Wharton (1952) validated the genus by naming the species *K. tragardhi* but they did not make any attempt to further describe the species. Attempts by the present authors to locate the type species in the Tragardh collection have been fruitless. Hunter and Butler (1966) described two additional species from Costa Rica. A key to the females of the species described by Hunter and Butler, and those described in this paper follows:

- |   |   |
|---|---|
| 1—latigynial plates triangular, not apposed .....               |   |
| .....   | <i>K. concava</i> Hunter and Butler       |
| 1'—latigynial plates truncate, apposed .....                    | 2   |
| 2—distal portion of peritreme lateral to coxa I .....           |   |
| .....   | <i>K. grabowskii</i> Chernoff and Pope    |
| 2'—distal portion of peritreme anterior to coxa I .....         | 3   |
| 3—6 pair of anal plate setae, 6 teeth on fixed chelicera .....  |   |
| .....   | <i>K. truncata</i> Hunter and Butler      |
| 3'—5 pair of anal plate setae, 7 teeth on fixed chelicera ..... |   |
| .....   | <i>K. tapachulensis</i> Chernoff and Pope |

It should be noted that the critical specific characters of these mites are not really known. Three of the four species have been described on the basis of a total of only 5 specimens. Until the variability within large numbers of mites of the same species is known, the significance of such characters as those used above are open to conjecture.

The holotypes of *K. grabowskii* and *K. tapachulensis* have been deposited in the Smithsonian Institution.

The authors would like to acknowledge the assistance of Mrs. Donna Thompson for collecting the host beetle of *K. tapachulensis*; to extend their thanks to Dr. H. F. Strohecker for his invaluable assistance during this project; to Dr. O. L. Cartwright, Curator, Division of Coleoptera, Smithsonian Institution, for the identification of the host beetles; and to Miss Holly Reynolds for the illustrations.



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